

Abstract

Not only damage to a nozzle caused by spatter generated during piercing is prevented but also the deterioration of the nozzle owing to a pilot arc is restrained, whereby the service life of the nozzle is significantly increased. To this end, the plasma torch is positioned at an initial level which is the distance between the plasma torch and a steel plate when generating a plasma arc to start piercing operation and which has been set equal to a cutting level which is the distance between the plasma torch and the steel plate when carrying out cutting operation. After generation of the plasma arc, the plasma torch is immediately raised to a piercing level which is more distant from the steel plate than the initial level and piercing operation is performed at the piercing level. After completion of the piercing operation, the plasma torch is lowered to the cutting level to start cutting operation. Just after transfer from a pilot arc into a main arc, a pilot current is cut off by turning a transistor off.